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## An Epidemiologist's View on Lawn Care

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The perspective of the epidemiologist as related to pesticides used for lawn care is vital to a clear understanding of safe use of a wide variety of chemicals. Dr. Stanley Schuman has recorded the following thoughts as a guide for discussion.

- Studies on birth defects tend to become complex. Animal studies on toxicology lead to studies on human births concerned with epidemiology. With animal defects, we can eliminate the animal (put it out of its misery). We do not eliminate people with defects. We identify more defects with humans then we do with animals, in general.
- Toxicological data accumulates rapidly. We may draw conclusions on rats that have nothing to do with people. The appearance of truth in interpretation may be highly distorted.
- Raspberries, peppers, root beer, and peanut butter cannot pass safety tests. There are some 10,000 more carcinogens in the daily diet than in the environment around us. Food is a major source of harmful chemicals.
- Plants like marigold and chrysanthemums generate nature's own pest control chemicals. These will not pass safety tests. There are mutogens (from mutations) such as:

Teratogen

Carcinogen

Co-carcinogen

Oncogene

that cause birth defects — chromosomal abnormalities. Defective ova and sperm may develop. There are intrauterine factors and hemolytic diseases.

 Environmental conditions that are considered health hazards include:

irradiation

drugs

alcohol

tobacco

viruses

heavy metals

plant toxins.

- With mutogens such as carcinogen it's a matter of luck or chance in early cell development. It's a chance that something can go wrong.
- What about pesticides and birth defects?
  - 10 percent are caused by environmental conditions;
  - 25 percent are genetic or chromosomal related;
  - 65 percent remain unexplained.

The 65 percent lend themselves to so-called witchcraft explanations and are fair game for legal action in the courts. For example, 4 percent of normal women will have a child with a birth defect. Five percent of agent orange exposed fathers will contribute to a birth defect in their off-spring.

• The media pick up enough information on these defects to arouse public concern. When one major defect or 3 minor defects are possible for every 100 live births, this touches pretty close to home. The importance of close survailance of birth defects is thus important. Monitoring began in 1970 with an

(cont'd. on page 6)

(An Epidemiologist's View cont'd.)

early warning system under development. There were 13 million births in 1982 and 16.5 million births in 1987. Defects are identified in 160 clinical categories of which 33 are major or life threatening. Three — Downes, club foot and cleft lip — account for 25 percent of the total major forms.

- There have been no changes in birth defects attributed to increases in the use of pesticides.
- Nerual tube defects are particularly sensitive to environmental influences. Trends for this defect are decreasing internationally. Most trends for defects are flat, indicating no change. This one decreasing trend is never reported on the news. There is an information gap; that prevents material considered not newsworthy from being used.
- From 1970 to 1983 in the birth defects category, 22 were reported as stable or decreasing and 11 were described as increasing. Five of the eleven were cardiovascular found to be increasing. This is likely the result of specialists working in this area with more data available. More accurate reports are likely when more specialists get involved. Thus, 6 of 11 were non-cardiovascular.
- Sylvex has been alleged to have caused problems, but the studies have been found flawed. 2,4,5-T has been given bad ratings and the media caught on to this right away. Regulatory services have had an influence. There has been much fear associated with myth in these instances. Such reports as "The Apolcolipities", "The Toxic Terror", and "The Coerciae Uptopians" have produced a vision of things going from bad to worse.
- Aging is the greatest threat to life at the present time. New information is providing better control of aging. With rats, one out of three die of old age. The age of cells is of critical importance.
- There are major limitations in measuring pesticides in ground water and to correlating this with human defects. Herbicides are often singled out as most dangerous (more so than fungicides or insecticides) probably because of dioxin. Where the dollars go, the publicity goes along with the media. The public cannot see the forest for the trees. Only 1 percent of the people are sensitive to chemicals. Five percent of people have allergies or are sensitive to irritants such as:

sulfur dust poison ivy pollon certain plants.

Some people that start out allergic, outgrow this condition.

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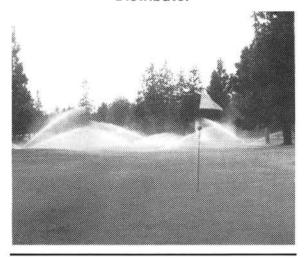
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